

REMARKS

At the time the current Official Action was mailed, the Examiner rejected claims 12-25. Reconsideration of the application in view of the remarks set forth below is respectfully requested.

Objections to the Specification

The Examiner objected to the specification for failing to provide proper antecedent basis for certain claimed subject matter. Specifically, the Examiner objected to the recitation of subject matter in certain of the dependent claims which was not also provided in the detailed description portion of the application. Applicants have provided replacement paragraphs incorporating the claimed subject matter into the specification. Applicants respectfully submit that because the subject matter was provided in the claims at the time of filing, that no new subject matter is being added to the application. Accordingly, Applicants respectfully request withdrawal of the Examiner's objection.

Rejections under 35. U.S.C. § 102

The Examiner rejected claim 12 under 35 U.S.C. § 102 as being anticipated by Michejda et al. (US 2002/0190344). Specifically, the Examiner stated:

Regarding claim 12, Michejda et al. discloses on figure 1A a transistor comprising a drain terminal 178 comprising a doped polysilicon material (para [0049]) disposed within a first shallow cavity formed in an isolation oxide region; a source terminal 178 comprising a polysilicon material (para [0049]) disposed within a second shallow cavity formed in the isolation oxide region; a channel 130 formed in a silicon material and arranged between each of the first shallow cavity and the second shallow cavity, wherein the channel comprises a respective doped region (para [0041])

coupled to each of the drain terminal and the source terminal; and a gate 120 disposed over the channel and comprising one conductive layer disposed over a gate oxide layer 122.

Applicants respectfully traverse this rejection. Anticipation under Section 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under Section 102, every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). To maintain a proper rejection under Section 102, a single reference must teach each and every element or step of the rejected claim. *Atlas Powder v. E.I. du Pont*, 750 F.2d 1569 (Fed. Cir. 1984). Thus, if the claims recite even one element not found in the cited reference, the reference does not anticipate the claimed invention.

Claim 12 of the present application recites a transistor comprising a drain terminal “disposed within a first shallow cavity formed in an isolation oxide region,” and a source terminal, “disposed within a second shallow cavity formed in the isolation oxide region.” One exemplary embodiment of this structure is illustrated in Figs. 3-6, which are fully described by the accompanying text in the present application. Specifically, in accordance with one exemplary embodiment, isolation oxide 58 is disposed within trenches 52, as illustrated in Fig. 3. Subsequently, cavities 60 are formed in the isolation oxide 58. A conductive material 64, such as polysilicon, is disposed within the cavities 60, as illustrated in Fig. 5. Finally, the structures are etched to form the source terminal 36 and the drain terminal 38 disposed within the shallow cavities 64 formed in the isolation oxide 58.

The Michejda reference does not disclose the recited structure. As clearly illustrated in Fig. 1A of the Michejda reference, the source and drain structures 178 are formed within trenches 410 and 415, *which are formed in the semiconductor substrate 110/210*. That is to say that the polysilicon material disposed to form the source and drain structures 178 of the Michejda reference are simply disposed in trenches formed in the semiconductor substrate 110/210. The Michejda reference does not disclose a drain terminal and a source terminal disposed within shallow cavities which are *formed in an isolation oxide region*, as recited in claim 12. In fact, the Michejda reference does not disclose forming shallow cavities in an isolation oxide region, at all, much less that the drain and source terminals of a transistor are formed therein.

Because the Michejda reference does not disclose the recited features discussed above, it cannot possibly anticipate claim 12. Accordingly, Applicants respectfully request withdrawal of the Examiner's rejection and allowance of claim 12.

Rejections under 35 U.S.C. § 103

The Examiner rejected claims 17, 18 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Michejda et al. in view of Tsuchiaki (US 6,271,566). Further, the Examiner rejected claims 13-16 under 35 U.S.C. § 103(a) as being unpatentable over Michejda et al. as applied to claim 12. Still further, the Examiner rejected claims 19-21 and 23-35 under 35 U.S.C. § 103(a) as being unpatentable over Michejda et al. and Tsuchiaki as applied to claims 17 and 22.

Applicants respectfully traverse these rejections. The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). Accordingly, to establish a *prima facie* case, the Examiner must not only show that the combination includes *all* of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985).

Claim 17 recites a memory device comprising a storage device and a transistor, wherein the transistor comprises a drain terminal “disposed within a first shallow cavity formed in an isolation oxide region,” and a source terminal, “disposed within a second shallow cavity formed in the isolation oxide region.” Claim 22 recites a system comprising a processor and a memory device, wherein the memory device comprises a transistor comprising a drain terminal “disposed within a first shallow cavity formed in an isolation oxide region,” and a source terminal, “disposed within a second shallow cavity formed in the isolation oxide region.”

As discussed above with respect to the rejection of claim 12, the Michejda reference does not disclose drain and source terminals disposed within shallow cavities, “formed in an isolation oxide region,” as recited in claims 17 and 22. Accordingly, for the reasons set forth

above, Applicants respectfully submit that the Michejda reference does not disclose all of the elements recited in independent claims 17 and 22. Further, Applicants respectfully submit that the Tsuchiaki reference does not cure the deficiencies of the Michejda reference. Accordingly, neither of the references, taken alone or in combination, could possibly render independent claims 17 and 22 obvious. Accordingly, Applicants respectfully request withdrawal of the Examiner's rejections of claims 17 and 22, as well as those claims dependent on each of the independent claims, and allowance of claims 13-25.

Conclusion

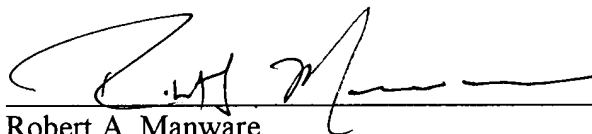
In view of the remarks and amendments set forth above, Applicants respectfully request reconsideration of the Examiner's rejections and allowance of claims 12-25. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

General Authorization for Extensions of Time

In accordance with 37 C.F.R. § 1.136, Applicants hereby provide a general authorization to treat this and any future reply requiring an extension of time as incorporating a request therefor. Furthermore, Applicants authorize the Commissioner to charge the appropriate fee for any extension of time to Deposit Account No. 13-3092; Order No. MICS:0114/FLE.

Respectfully submitted,

Date: May 16, 2005

A handwritten signature in black ink, appearing to read 'R. A. Manware', is written over a horizontal line.

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